

Chapter 7

Transportation

A. Overview

Streets are one of the most important physical parts of any city and can often represent as much as one-fourth of the community's total developed area. In addition to the movement of traffic throughout the community, streets have numerous other functions. Streets provide access to abutting properties, provide for open space between buildings, accommodate drainage for abutting properties and provide space for the installation of the various utilities, such as storm sewers, sanitary sewers, water mains, gas mains, cable television and electric transmission lines. Streets are also the chief means by which emergency services, such as police and fire protection, are provided to an area. In Colleyville, streets represent approximately 12 percent of the total land area.

Since streets provide the routes for the movement of people and goods to, from and through the community, considerable forethought should be given into the development of an adequate circulation plan. The city's future growth and the locations of the various land use arrangements are ultimately determined, to a large degree, by the location and type of transportation facilities available to handle traffic, both within the city itself, and between the city and adjacent communities.

Access to the major transportation network is very important to the community, since 95.6 percent of all Colleyville workers commute to work in automobiles, according to information obtained from the 2000 census. The mean travel time for those commuting to work is 27.6 minutes (2000 Census data).

Basic data regarding commuting patterns is shown in Table 7-1 below.

Table 7-1 Commuting to Work Colleyville - 2000		
Means of Travel	Number	Percent
Car, truck, or van – drove alone	8,182	86.6
Car, truck, or van - carpooled	474	5.0
Public transportation (including taxicab)	18	0.2
Walked	23	0.2
Other means	123	1.3
Worked at home	624	6.6
Mean travel time to work (minutes)	27.6	

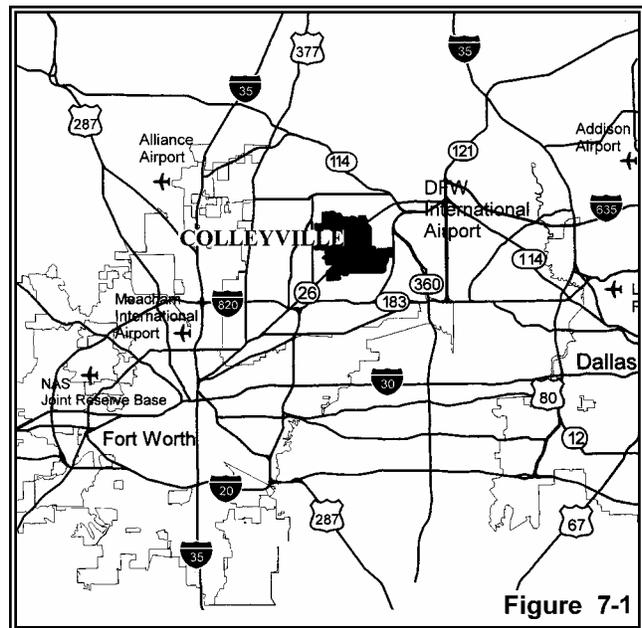
Source: U. S. Census, 2000

Several citizen comments made during neighborhood meetings associated with the development of this master plan update suggested the need to plan for mass transit opportunities in the future. In fact, the North Central Texas Council of Governments has embarked on a study which has identified the use of the DART railway line, which extends through Colleyville, as a route for light-rail passenger service to connect downtown Fort Worth with the Dallas-Fort Worth International Airport. Early planning studies have identified the need for one transit stop in Colleyville. The three preliminary locations for the transit stop are (1) the Bransford Road – DART railway crossing, (2) the Pleasant Run Road - DART railway crossing, and (3) near the intersection of John McCain Road and the DART railway.

B. Major Transportation Network

The major transportation facilities serving Northeast Tarrant County are Interstate Highways 30 and 35W, Loop 820, State Highway 183, and State Highway 121. The major highway network is shown in Figure 7-1.

Each of these facilities plays an important role in gaining access to Colleyville. Interstate Highway 30 is a major national roadway extending east from Dallas and west from Fort Worth. Interstate Highway 35W connects Laredo, Texas with Duluth, Minnesota and is a very heavily traveled highway. In recent years, it has become a major route for truck traffic associated with international trade.



Loop 820 is the major circulation route around Fort Worth and serves a number of communities located on the edge of Fort Worth's urban area. State Highway 183 basically extends east and west between Dallas and Fort Worth and is a major facility for commuters between these two cities and for the cities situated on each side of this major highway.

Of the major roadway facilities described above, only State Highway 121 has a direct physical connection with Colleyville. State Highway 121 extends along the eastern boundary of Colleyville, and provides a major connecting route to DFW Airport and to

the northern portion of Dallas. The significant street intersections serving Colleyville are at Cheek-Sparger Road, Glade Road and Hall-Johnson Road.

However, there are two other important transportation routes that directly serve Colleyville; State Highway 26 and Precinct Line Road (F. M. 3029). State Highway 26 is a four-lane highway that extends diagonally through the center of Colleyville, entering from the southwest and exiting at the northeast corner of the city and it is along this corridor where the majority of Colleyville's commercial properties are located. Precinct Line Road extends along the western edge of Colleyville and serves as the western boundary between Colleyville and North Richland Hills.

C. Major Traffic Generators

Typically, the major sources of traffic in a community are internal, such as a school or a shopping mall. But in Colleyville, a significant amount of vehicular traffic is generated by those commuters living in adjacent communities who travel through Colleyville to reach destinations in other adjacent or nearby communities. State Highway 26 carries a significant amount of external commuter traffic, but its route does not extend through Colleyville's residential neighborhoods as do the east-west roadways of McDonwell School Road, John McCain Road, Glade Road, Hall-Johnson Road and Cheek Sparger Road. Except for the traffic on Glade Road and Hall-Johnson Road, which provides access to the commercial areas along State Highway 26, Colleyville receives very little economic benefit from this increased traffic through the community.

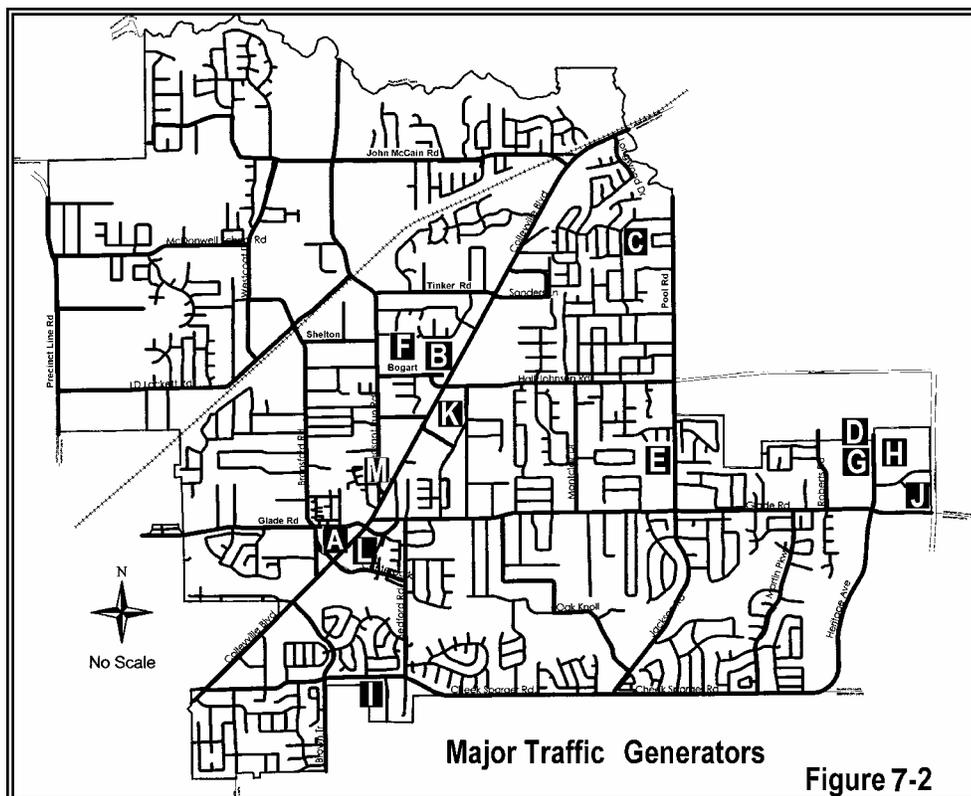
At the present time, North Tarrant Parkway is being extended to Interstate Highway 35W between Fort Worth and Keller. This route will provide a multi-lane connection from the north side of Fort Worth to Precinct Line Road. Upon completion of this roadway, east-bound traffic will likely increase along McDonwell School Road and John McCain Road in the future. Mid-Cities Boulevard already provides a multi-lane east-west roadway from the City of Saginaw to Colleyville, connecting with Cheek Sparger Road.

The early morning and late evening commuting traffic, which comes from external sources, creates additional congestion at major intersections in Colleyville and makes it difficult for Colleyville residents to gain access into and out of their own neighborhoods. Most of the major intersections on the collector system in Colleyville are two-lane intersections and are not currently designed to accommodate high volumes of turning movements.

In Colleyville, the major traffic generators which are internal to the community are listed in Table 7-2 below and consist of public and private school facilities, the Glade Points shopping center, the Village Park shopping center, the Town Center shopping center,

and the Village at Colleyville. The location of the major traffic generators is shown graphically on Figure 7-2.

Table 7-2 Major Traffic Generators		
Map Key	Name of Facility	Location
A	Bransford Elementary School	601 Glade Road
B	Colleyville Elementary School	5800 Colleyville Boulevard
C	Glenhope Elementary School	6600 Glenhope Circle
D	Heritage Elementary School	4500 Heritage Avenue
E	O. C. Taylor Elementary School	5300 Pool Road
F	Colleyville Middle School	1100 Bogart Drive
G	Heritage Middle School	5300 Heritage Avenue
H	Colleyville Heritage High School	5401 Heritage Avenue
I	Covenant Christian Academy	901 Cheek Sparger Road
J	Glade Point Shopping Center	3900 block Glade Road
K	Town Center Shopping Center	5700 block Colleyville Boulevard
L	Village Park Shopping Center	4700 block Colleyville Boulevard
M	The Village at Colleyville	Main St. & Pleasant Run Road



Not included in Table 7-2 or shown on Figure 7-2 is Keller ISD's proposed new elementary school, which will be located at the southeast corner of the intersection of Precinct Line Road and McDonwell School Road. This facility is scheduled to open in the Fall of 2005 and will bring additional congestion and concerns for traffic safety at this intersection, which is already quite heavily traveled.

Respondents to the sample telephone survey conducted in conjunction with this master plan update were asked to rate selected transportation situations as being either severe, modest, minor problems, or not a problem. The most severe transportation problems were around schools (34.9%) and on State Highway 26 (31.3%). Shown in Table 7-3 is a summary of the transportation problems identified by the respondents to the telephone survey.

Table 7-3 Colleyville Transportation Problems				
	Percentage Responding			
	Severe	Modest	Minor	No Problem
Traffic congestion around schools	34.9	39.4	13.8	11.9
Traffic congestion on SH 26	31.3	43.9	15.3	9.6
Lack of bicycle routes	28.4	25.8	17.2	28.7
Lack of public transportation	23.6	13.4	14.8	48.1
Sidewalks	16.8	25.0	17.9	40.3
Traffic congestion elsewhere	12.7	42.1	25.3	19.9
Condition of roads	10.4	41.0	23.1	25.6
Traffic signals and signs	9.2	38.3	19.5	32.9

Source: Colleyville Citizen Survey and Needs Assessment 2003, Survey Research Center, University of North Texas, July, 2003

D. Traffic Volumes

The Colleyville Public Works Department collects traffic volume information on an annual basis for most of the major roadways in the community. These traffic counts are generally taken near major intersections of the collector roadway system. Information on traffic volumes is useful for economic development purposes as well as for establishing a sound roadway maintenance or improvement program. The most recent traffic count data available is shown in Table 7-4 below.

Table 7-4 Traffic Counts at Major Intersections - 2002					
Street Intersection	North Bound	South Bound	East Bound	West Bound	Total Vehicles
S. H. 26 @ Cheek Sparger	14,764	18,155	NA	4,790	37,709
S. H. 26 @ Brown Trail	19,032	15,916	4,768	5,543	45,259
S. H. 26 @ Center Park	18,755	18,755	1,191	2,801	41,502
S. H. 26 @ Glade Road	13,861	17,180	4,671	4,039	39,751
S. H. 26 @ Hall Johnson	13,358	11,434	4,970	1,738	31,500
S. H. 26 @ Tinker Road	15,801	12,511	NA	2,054	30,366
S. H. 26 @ John McCain	20,372	18,080	5,173		43,625
Glade Road @ S.H. 121 (S.R.)	Not taken	8,314	NA	11,960	20,274
Glade Road @ Bluebonnet	1,131	NA	4,179	4,276	9,586
Hall-Johnson Road @ Pool Road	NA	NA	4,165	NA	4,165
Hall-Johnson Road @ Bluebonnet	9,574	NA	NA	NA	9,574
Pleasant Run Road @ Church Street	Under Const.	NA	1,800	NA	1,800
Pleasant Run Road @ John McCain	2,128	4,017	3,614	3,513	13,272
Precinct Line Road @ L.D. Lockett	8,461	6,819	NA	1,146	16,426
Precinct Line Road @ McDonwell School Road	5,803	4,314	NA	3,109	13,226

Source: City of Colleyville Public Works Dept., 2003

E. Purpose of the Master Thoroughfare Plan

While the city master plan may consist of several components, such as those elements dealing with land use, circulation, public facilities, economic development and implementation strategy, none of the parts considered separately will constitute the whole plan. One of the more important parts of the master plan is the master thoroughfare plan, which identifies the major thoroughfare routes serving the community and the general location of all future major thoroughfares. The most recent version of the Colleyville Thoroughfare Plan was adopted in January, 2000.

Local streets primarily serve the adjacent properties, whereas the primary purpose of a major thoroughfare roadway is to provide access from one location in the community to another location, such as to a shopping area, a church or a school, without having to serpentine through a series of residential neighborhoods.

To provide for the continuity of the major roadway network, it is important for a community to adopt subdivision standards which provide for the dedication of sufficient right-of-way and construction of the necessary pavement segment as new developments are constructed. Such standards are currently contained in the Colleyville Land Development Code.

F. Thoroughfare Classifications and Standards

This section of this report defines the various roadway classifications and provides information which describes the purpose and function of each roadway classification. Since each type of roadway in a community has its own separate function, the right-of-way widths, number of lanes, and the driving lane widths vary according to the street classification. A well designed network of major thoroughfares should work together in establishing an overall system that is efficient, yet safe, and offers service levels that are acceptable to the community.

Primary Arterial Thoroughfares

These facilities provide for the expeditious movement of traffic between areas and across cities. The main purpose of the expressway-freeway is to move large volumes of traffic at relatively high speeds with as few delays and interruptions as possible and not to provide direct access to the adjacent lands. Since expressway-freeway systems are designed to carry the inter-regional traffic, normally they do not have intersections at grade. Expressways and freeways have right-of-way width requirements of 300 to 400 feet and access to abutting property is usually provided by parallel service roads and/or separate streets.

Major arterial thoroughfares are generally multi-lane facilities and are often constructed and maintained by the state department responsible for highway maintenance. Minor arterial roadways in Colleyville provide for traffic movement from the various neighborhoods to commercial areas and other major traffic generators, such as schools and municipal buildings, and also serve as routes for thru-traffic from adjacent cities.

Collector Streets

The major function of the collector street is to bring traffic from local residential streets to a primary arterial roadway or to a major traffic generator, such as a school, shopping center, or public facility. Land access is, or should be, a secondary function of a collector roadway. Numerous driveway cuts tend to increase traffic accidents and affect safety issues. Parking on collector roadways should be discouraged, and residential buildings preferably should not face onto, or have driveways entering, the

collector streets. Like the local street, a collector street functions as an easement or location for utilities and communications.

From a design standpoint, the cross section of a collector street should not be narrower than any of the local streets entering it, for obvious reasons. Additionally, the design of a collector street should include consideration for the right-of-way width and number of lanes of those collector streets which provide for continuity of the overall system. Right-of-way widths will probably vary between 60 and 80 feet with pavement widths of 40 to 48 feet.

The design of collector streets is most important for development of traffic safety. Local streets should not cross the collector directly. Tree plantings should be held back from the street, and the sidewalks should be separated from the pavement by a wide parkway. Sight distances at intersections should be adequate, with no visual barriers near intersection corners.

Local or minor Streets

The minor street system is intended to provide for internal traffic movement and for gaining direct access to the residential-commercial-industrial land uses. Local or minor streets generally make up the majority of the residential streets in a community. A typical urban dwelling unit generates approximately 10.0 trips per weekday, making it fairly easy to estimate traffic volumes on local residential streets.

While the actual cross-section of local streets may vary from community to community, depending upon street construction practices, abutting land uses, parking, weather conditions, planting of street trees, and other considerations, in Colleyville, local streets will generally have a common right-of-way width of 50 feet. Pavement widths for a local street are 30 feet (31' back to back of curb). This pavement width is adequate for fairly low residential densities.

Due to safety concerns in Colleyville, a local street having a total length in excess of 1,200 feet or serving more than 30 dwelling units may be required to have a right-of-way width of sixty feet. Additionally, a Cul-de-sac street exceeding 600 feet in length shall have a 56' right-of-way with a pavement width of 36 feet.

In commercial and industrial developments, greater widths are necessary to provide for adequate access of emergency vehicles and to provide for suitable parking that allows for two-twelve foot driving lanes. Minimum right-of-way widths of 60 to 100 feet should be considered proper, depending on the type of parking, sidewalk widths, traffic volume and turning movements of commercial vehicles.

The hierarchy of street classifications and standards used in Colleyville is shown in Table 7-5 below.

Table 7-5 Right-of-Way and Pavement Standards					
Street Classification (1)	Street Type	R.O.W. Width (feet)	Lane Width (feet)	Total Pavement Width (feet)	Number of Lanes
Local	R2U	50 (2)	15	30	2
Cul-de-sac	R2U	50 (3)	18	36 (3)	2
Minor Collector	C2U	75	12	42	2 w/ 9' parking or 3 w/o parking
Major Collector (two lane)	C3U	75	12	42	2 w/ 9' parking or 3 w/o parking
Major Collector (four lane)	C4U	80	12	48	4 undivided
Minor Arterial	M4D	95	13	52	4 divided
Major Arterial	P4D	120	13	52	4 divided
Primary Arterial \ S. H. 26	P6D	120	12	76	6 divided

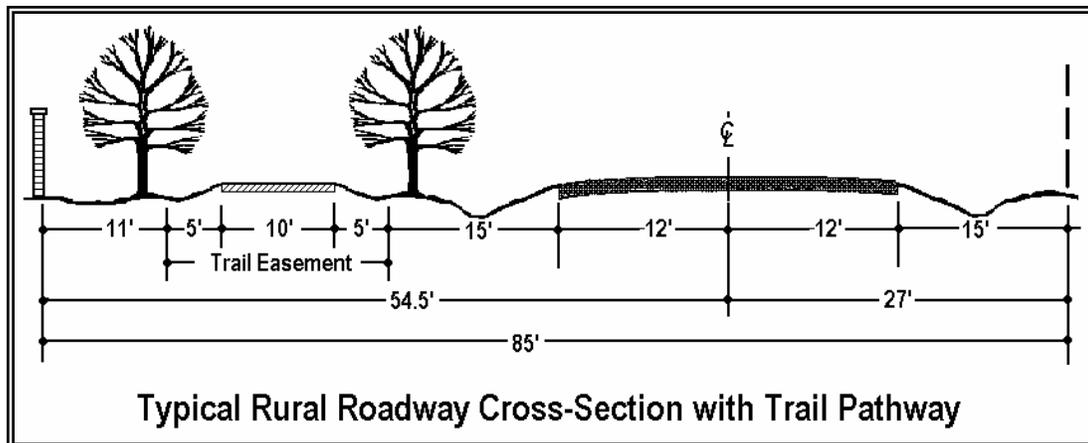
- (1) Street classification refers to the functional classification shown on the Master Thoroughfare Plan
- (2) A local street having a total length in excess of 1,200 feet or serving more than 30 dwelling units may be required to provide a right-of-way width of not less than 60 feet
- (3) A cul-de-sac street exceeding 600 feet in length shall have a 56 foot right-of-way and 36 feet of pavement

G. Approach to Thoroughfare Planning

Most residents of Colleyville enjoy the country feeling associated with driving along the thoroughfare roads within and through the community. Furthermore, most Colleyville residents are generally pleased with the conditions of the streets in the community, according to the telephone survey taken during the summer of 2003, which revealed that nearly two-thirds (64.7%) of the respondents rated the condition of neighborhood streets as excellent (15.0%) or good (49.7%).

The old county roadway system that existed for many years in most of the neighboring communities eventually gave way to multi-lane re-construction projects. But in Colleyville, the old county roadway system has been retained and generally functions as the collector roadway network.

One method of continuing to foster the rural atmosphere along the collector roadway system is to incorporate a rural roadway section in the street construction standards. Such a rural cross section which has sufficient right-of-way width could accommodate the future trail system, a driving surface, and the necessary drainage-ways. The following roadway cross-section is an example of a typical rural roadway.



Historically, there has not been widespread support by the citizens of Colleyville to undertake any street widening projects for the collector roadway system. However, the sample telephone survey taken in 2003 indicates that within the community there are diverse opinions regarding the improvement of the major street collector network, either through intersection improvements or street widening projects or adding lanes to some, but not all, collector roadways.

For example, the telephone survey revealed that when asked if they would support or oppose wider travel lanes on existing 2-lane streets, 63.3 percent of the respondents stated they would support (strongly support and support) such a public improvement. When asked if they would support or oppose the adding of two or more lanes to some streets 62.6 percent stated they would support (strongly support and support) this type of public improvement.

Conversely, the overwhelming majority of those citizens attending the neighborhood meetings were very specific in their opposition to adding of more driving lanes to Cheek Sparger Road, Glade Road, McDonwell School Road and John McCain Road.

H. Thoroughfare Plan Recommendations

The 2025 Future Land Use Plan recommended in this report reduces the depth of the commercial area along Precinct Line Road from approximately 1,800 feet to approximately 900 to 1,000 feet. The rationale for this reduction of the commercial depth is explained in detail elsewhere in the Land Use chapter of this report. In conjunction with the proposed revisions to the future land use plan along Precinct Line Road, it is recommended that the master thoroughfare plan be amended to relocate a future major roadway paralleling Precinct Line Road.

The master thoroughfare plan currently shows a future four lane roadway approximately 1,400 feet to the east of and parallel to Precinct Line Road (see Figure 7-

2). The master thoroughfare plan should be amended to relocate this future collector roadway to an alignment similar to that shown in Figure 7-2. The revised alignment is much closer to Precinct Line Road, varying from approximately 500 feet to 900 feet from Precinct Line Road, but still provides separation between the commercial area along Precinct Line Road and the residential area to the east. Consideration should also be given for designating this future roadway a two-lane facility instead of the four-lanes shown on the current master thoroughfare plan. A wide two-lane roadway should be adequate to provide circulation for the commercial area along Precinct Line Road.

To avoid intersecting conflicts with the Emerald Park subdivision, the future roadway would include a slight curve towards Precinct Line Road and would be approximately 500 feet east of Precinct Line Road. Plate 7-1 shows the proposed revision to the master thoroughfare plan, which incorporates the proposed relocation of the collector street adjacent to Precinct Line Road.

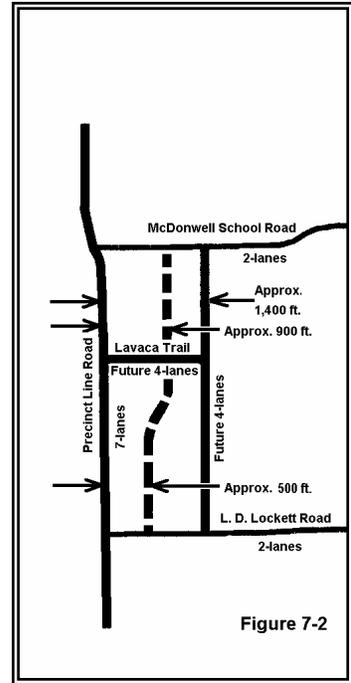


Figure 7-2

